

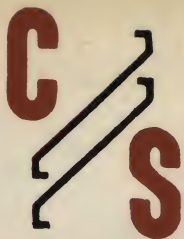
C S[®]

LOUVERS

*in
extruded aluminum*

1959

CONSTRUCTION SPECIALTIES, INC.



For design, adaptability, strength and economy, C-S Extruded Aluminum Louvers present themselves as the finest products in their field, reflecting our years of leadership, successful experience and specialization in extruded aluminum louver design and fabrication.

Wherever louvers are proposed, C-S Louvers merit special consideration.

product development C-S has remained leader in the manufacture of extruded aluminum louvers, sunshades, and cast aluminum brick size vents because of its integrated product development program.

C-S engineering and research is a continuous process contributing to optimum louver efficiency and economy, as well as sound architectural design. Major improvements and innovations made by Construction Specialties, cover the Horizontal-Line Louvers, Extruded Louvered Penthouses, C-S Cooling Tower Screens, and C-S Extruded Aluminum Operating Louvers.

This catalogue introduces a full line of Electrical Controls for C-S Operating Louvers and two new Cooling Tower Screens.

trim appearance C-S Louvers are unusually clean-cut and attractive. Our use of extruded aluminum provides sharp returns, appealing finish, and the superior strength and rigidity to resist denting, deflection and vibration stresses that tend to occur in conventional sheet metal louvers. Since aluminum is corrosion resistant, C-S Louvers will not streak adjacent walls and permanently retain their pleasing silver-gray appearance.

versatility C-S Louvers cover virtually every conceivable architectural requirement with respect to style, finish, and operation, and are custom-made to answer exactly the requirements of size and structural condition. Special louvers may be developed in any individual requirement.

economy The superior quality of C-S Louvers is available at prices sharply competitive with those of other louver types. Our experienced engineering and production facilities, and the labor savings inherent in our use of extruded assemblies are the key to this important feature. In addition, our all-aluminum construction provides important maintenance economies.

finishes C-S Louvers are available in a wide variety of superior finishes as detailed on page 19. These include etch and lacquer, anodized coatings, epoxy color finishes, and porcelain enamel on aluminum. We suggest the architect specify a minimum etch and lacquer finish on all C-S louvers.

production Our louvers are thoroughly engineered, thoroughly job-tested products, manufactured and finished to high quality standards. Two complete, modern plants are located in Cranford, New Jersey and Escondido, California to provide efficient, economical service to both East and West coasts. Our production and finishing facilities represent the finest of their type in the country today.

engineering service Our engineering staff is expertly equipped to be of service at any time when problems of design or use of louvers are encountered. Qualified C-S Representatives, whose telephone numbers are shown on the back cover, are located throughout the country to also be of immediate service to the architect.

Standard Life Building, Indianapolis, Indiana
Architects, Skidmore, Owings and Merrill, Chicago

C-S Fixed Louvers A-225, used in window wall application for unit air conditioning. Louvers furnished in Architectural Gray 2030 Anodize.

Portland Generating Station, Portland, Pennsylvania
Gilbert Associates, Engineers

C-S CO-222 Operating Louvers featuring multiple bay operation with remote controls. Louvers were furnished in the standard C-S etch and butyrate lacquer finish.

Industrial Trust Building Corp., Wilmington, Delaware
Architects, Whiteside, Moeckel and Carbonell

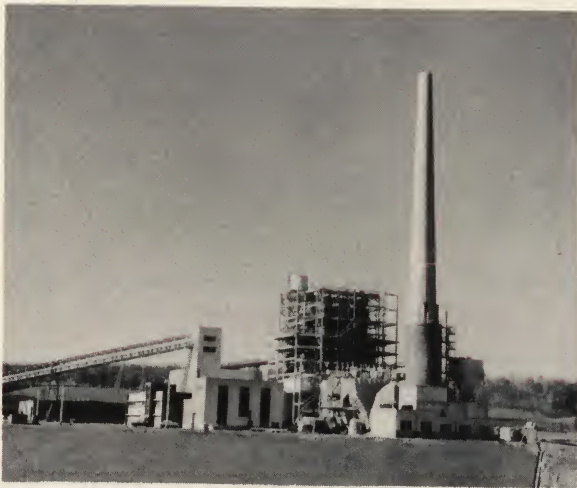
The JR-555 Vertical Line Louver is used to effectively screen the cooling tower installation and harmonize with the vertical line of adjacent metal siding. This screen was furnished in a 204 R-1 anodize and butyrate lacquer finish.



1

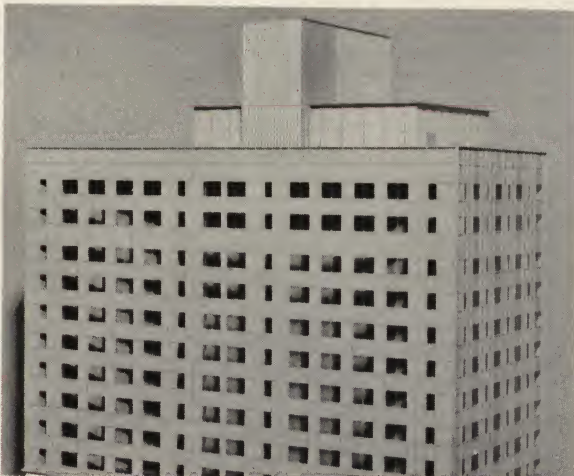
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finishes	19



3

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standard mullion louvers

SU-101, SL-104

features

material Extruded aluminum sections 6063-T5 alloy, minimum .081 gauge with reinforcing bosses. All fastenings are stainless steel or aluminum.

efficiency SU-101 louvers have a free area of 52%; SL-104 louvers 43%. These optimum percentages are based on louvers over 16 square feet with standard spacing as detailed. Where conditions indicate a change in blade spacing, contact our engineering department for complete engineering information.

structural head, sill and jambs All C-S head, sill and jamb sections are one piece structural members with formed caulking slots. The head section is equipped with an exterior drip lip and the sill section has an integral water stop. Jambs have returns front and rear to neatly frame and protect the louver blades and to act as a water bar.

blades Blade design has been engineered and tested to give efficient air flow consistent with maximum weatherproofness. Reinforcing bosses and returns at top and bottom add strength and rigidity to all blades.

slidable interlocked mullions The C-S slidable interlocked mullion is a heavy gauge extruded section with integral tongue and groove construction. Mating sections simply slide together and remain interlocked with adequate provision for expansion and contraction, eliminating the necessity of sheet metal cover plates and unsightly field fastenings.

architectural horizontal line louvers

AL-400, AL-800

features

design C-S designed the AL series to provide a louver which would combine maximum ventilation together with a horizontal line which the architect could make a positive part of his artistic design. The louver blades may be formed to the contour of the building so that the horizontal sweep of the louver remains unbroken around corners and pilasters. Access panels may be incorporated as required.

The simplicity of the louver and its ease of erection make the AL Louvers the most economical extruded aluminum louvers available.

interlocked blade brace The C-S Snap-in interlocked Blade Brace is a C-S exclusive feature which makes possible our quality horizontal line louver. The blade brace sturdily supports the blades from the structural members at the back of the louver opening. The interlocking action eliminates chatter, deflection and up-lift under the heaviest wind loads. The snap-in design makes for fast easy accurate field erection. Louvers may be made and installed up to 26 feet wide without joints.

Blade braces assure accurate blade line-up to provide virtually invisible joints where horizontal line louvers over 26 feet wide are desired.

material Extruded aluminum sections 6063 T5 alloy, minimum .081 gauge with reinforcing beads. Structural supports must be engineered to the height of the openings so that they will rigidly carry a wind pressure of not less than 20 lbs. per square foot. The minimum supports are 2" x 2" x 1/4" 6061-T6 aluminum angles.

efficiency The AL-400 louver has a free area of 54%; the AL-800 stormproof louver has a free area of 45% with standard spacing.

suggested specifications

Furnish and install in all openings where so indicated on the drawings, C-S extruded aluminum louvers stationary Model SU-101 (or SL-104) as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Frame and blades to be 6063-T5 alloy, minimum .081 gauge, with reinforcing bosses. Heads, sills and jambs to be one piece structural members as detailed, and to have integral caulking slot and retaining bead. Slidable interlocked mullions to have provision for expansion and contraction. Mullions over 84 inches high shall be a minimum .125 gauge. All fastenings to be stainless steel or aluminum. All louvers to be furnished with #2 mesh, .063 diameter wire bird screen secured in removable extruded aluminum frames. All louvers to be free of scratches and blemishes, to be given a six minute caustic etch after fabrication and one coat of CS-64 clear butyrate lacquer.

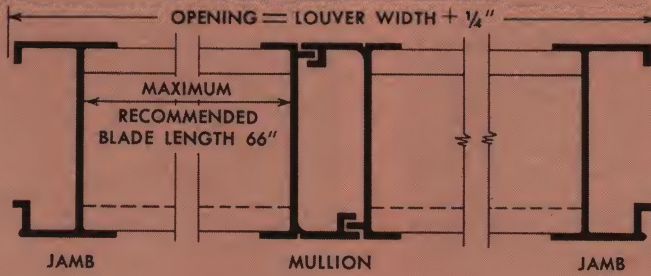
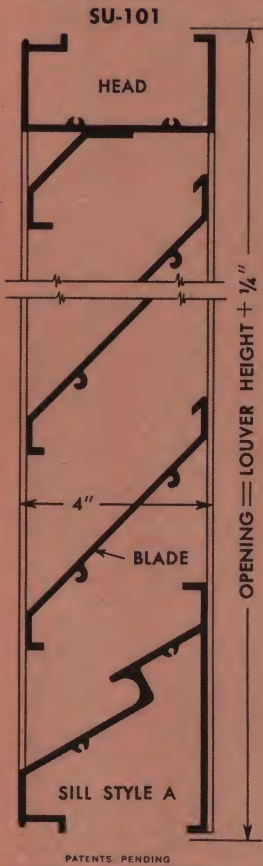
For alternate finish specifications, refer to page 19. For alternate screen specifications, refer to page 18.

suggested specifications

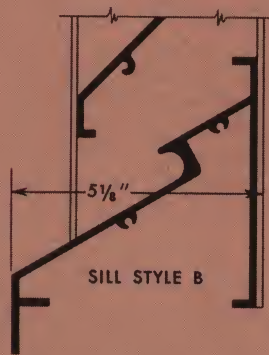
Furnish and install in all openings where so indicated on the drawings, C-S Extruded Aluminum Architectural Line Louvers, Model #AL-400 (or Model AL-800) as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Frame and blades to be 6063 T5 alloy, extruded aluminum sections, minimum .081 gauge with reinforcing beads. All louvers to be supplied with sills and anchorages as detailed. All blades to be supported and lined up by the use of heavy gauge extruded aluminum blade braces, positively interlocked to each blade and secured to structural angles by stainless steel fastenings. Structural supports to be designed to carry a wind load pressure of not less than 20 lbs. per square foot. Minimum supports to be 2" x 2" x 1/4".

Provision for expansion to be provided at jambs of louvers up to 26 feet wide. Expansion joints to be approximately 20 feet on centers thereafter. All louvers to be furnished with #2 mesh .063 diameter wire bird screen secured in removable extruded aluminum frames. All louvers to be free of scratches and blemishes, to be given a six minute caustic etch after fabrication and one coat C-S 64 butyrate lacquer.

For alternate finish specifications refer to page 19. For alternate screen specifications refer to page 18.

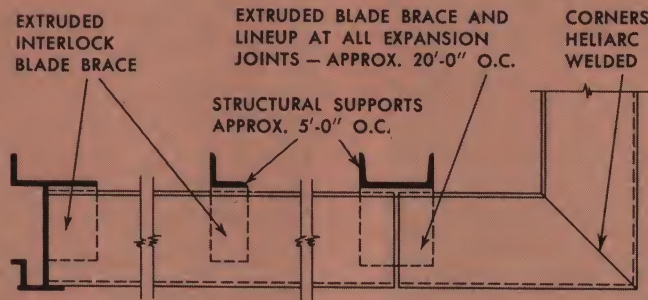
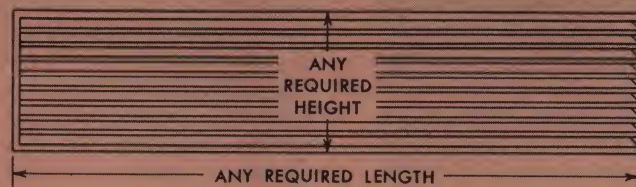
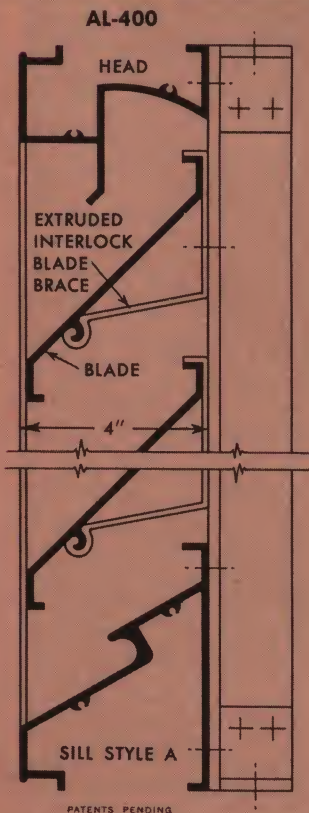
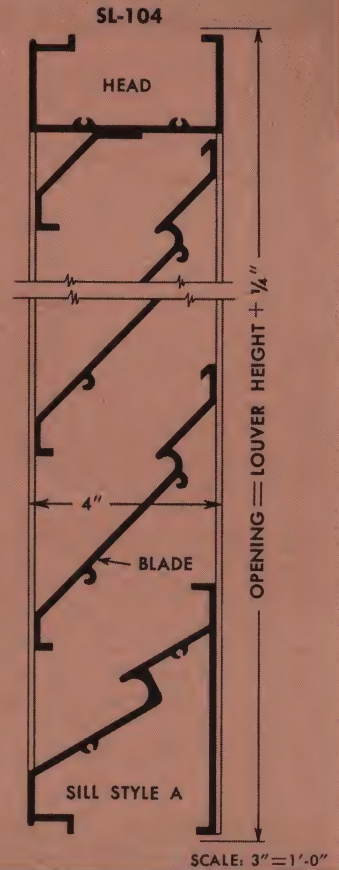


FOR ALTERNATE FRAME
OR BLADE EXTRUSIONS
SEE PAGES 6 AND 7

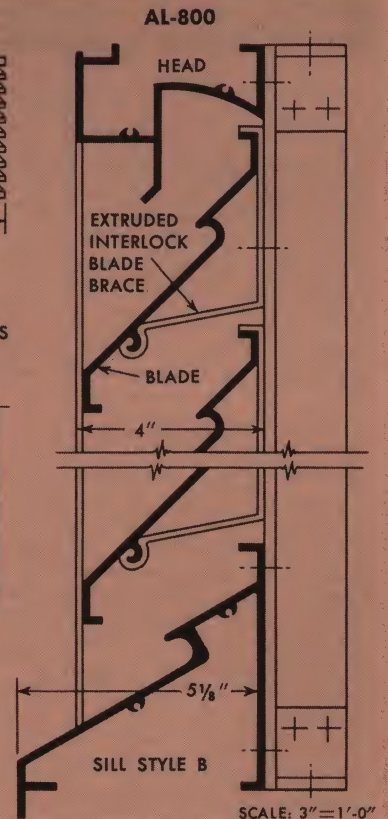


SILL EXTENSION
AS DESIRED

ALL C-S SILL STYLES ARE INTERCHANGEABLE



FOR A LARGER MODULE IN THE
HORIZONTAL LINE LOUVER USE
OUR 6 OR 8 INCH BLADE EXTRUSIONS
WITH INTERLOCK BLADE BRACES
SEE PAGE 8



window wall louvers

Z-404, Z-808

features

frames The Z frame is 4 inches deep and is designed to use standard SU101 and SL104 blades. The frame is mitered at corners and rigidly reinforced by corner brackets. Closure plates for head, sill, and jamb are available if desired. Screening may be neatly added on either interior or exterior of frames.

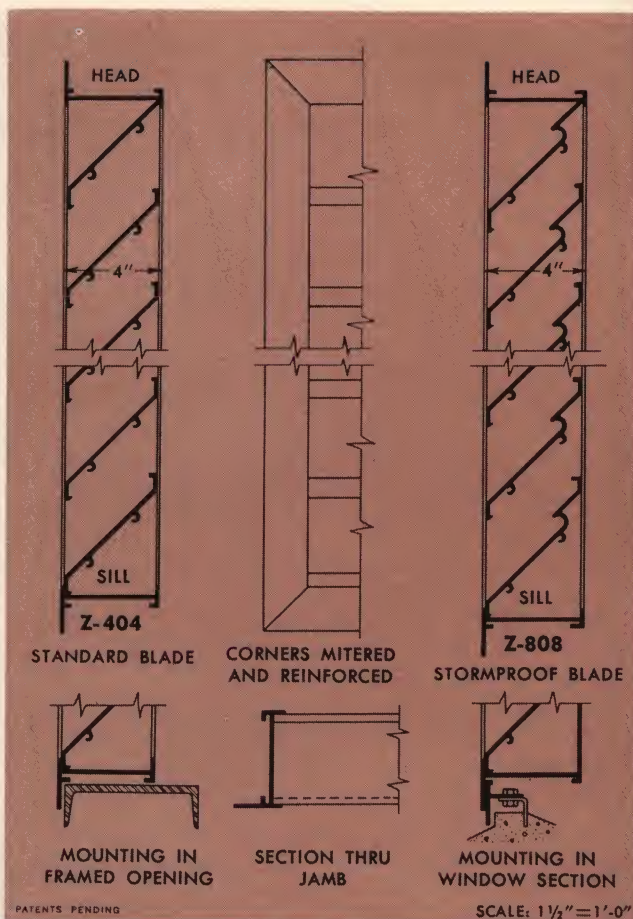
C-S operating louvers as detailed on pages 10, 12, and 14 may be incorporated in our Z-type frame. Specify C-S unit number Z-211, clearly indicating the type operator.

material Extruded aluminum sections, 6063 T5 alloy, minimum .081 gauge with reinforcing bosses.

efficiency The standard Z-404 louver has a free area of 52%. The Z-808 stormproof louver has a free area of 43%. These optimum percentages are based on louvers or 16 square feet with standard spacing as detailed.

suggested specifications

Furnish and install in all openings where so indicated on drawings C-S extruded aluminum louvers model number Z-808 or Z-404 as desired as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Frames and blades are to be 6063-T5 alloy, minimum .081 gauge with reinforcing bosses. Z frames to be neatly mitered and reinforced with corner brackets. (For screen and finish specifications refer to pages 18 and 19).



transformer louvers

JP-429

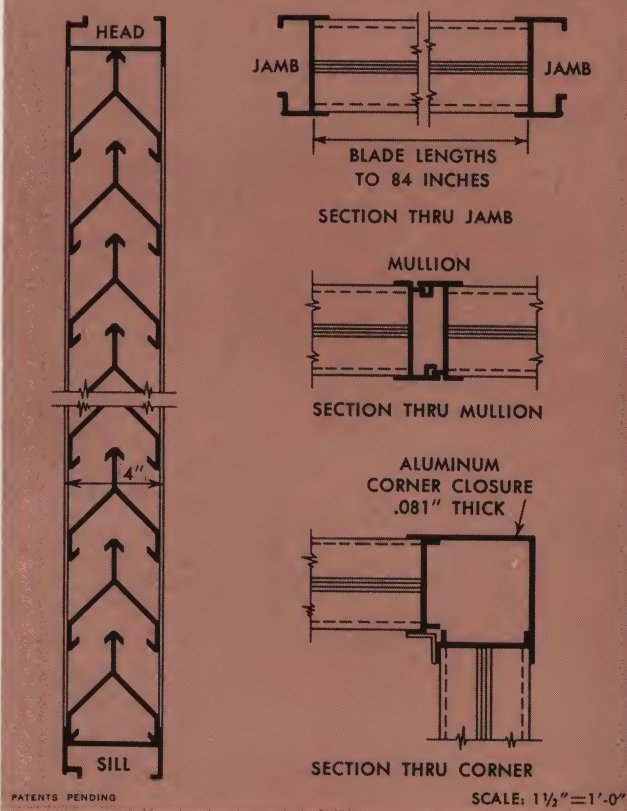
features

design The C-S transformer louver is designed as a safety louver for installations of transformer rooms in schools, shopping centers, or industrial buildings. It effectively prevents the insertion of wires, rods or sticks into the transformer area, yet has good ventilation and weatherproof qualities. This blade is an exceptionally strong extruded shape and may be used for spans up to 84 inches. This louver may also be used where a sightproof louver is desired.

material Extruded aluminum sections 6063-T5 alloy, minimum .081 gauge with structural reinforcing bosses.

suggested specifications

Furnish and install in all openings where so indicated on drawings C-S extruded aluminum louvers model JP 429 as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Frame and blades to be 6063-T5 alloy minimum .081 gauge with reinforcing bosses. Head, sill and jamb sections to be one piece structural sections with caulking slots and retaining beads. Mullions to be sliding interlocked type with provision for expansion and contraction. (For screen and finish specifications refer to pages 18 and 19.)



air conditioning louvers

LZ-138, AZ-138, LZ-200, AZ-200

features

material Extruded aluminum sections, 6063-T5 alloy, minimum .051 gauge with structural reinforcing bosses.

design The AZ and LZ louvers are designed to be a sturdy, good looking air intake for air conditioning units. Blades are set at a 30° angle. Double water bars are incorporated into the extrusion to increase the maximum cfm of air which can be passed without water entrainment. Blade spans to 48 inches are available. We recommend all louvers over 36 inches wide be supported at rear by a reinforcing bar.

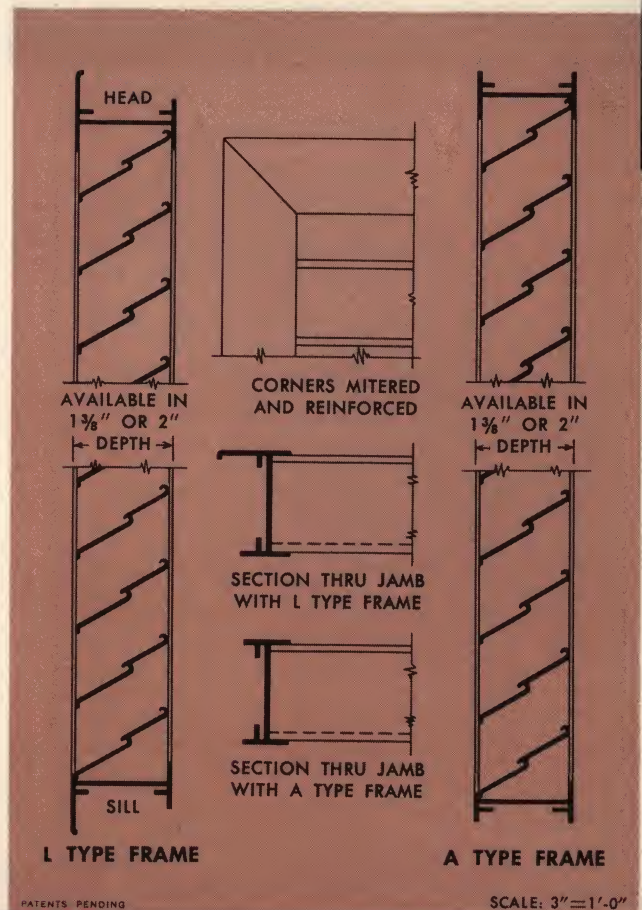
frames All frames are mitered at corners and reinforced with corner brackets.

sizes available

model	louver depth inches	frame style	free area
LZ-138	1 3/8	L	62%
AZ-138		A	
LZ-200	2	L	
AZ-200		A	

suggested specifications

Furnish and install in all openings where so indicated on drawings C-S extruded aluminum Air Conditioning Louvers model (see table) as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Frame and blades to be 6063-T5 alloy minimum .064 gauge with reinforcing bosses. All blades to be 30° with double water bar. All frames to be neatly mitered at corners and reinforced with corner brackets. (For screen and finish specifications refer to pages 18 and 19.)



panel wall louvers

A-225

features

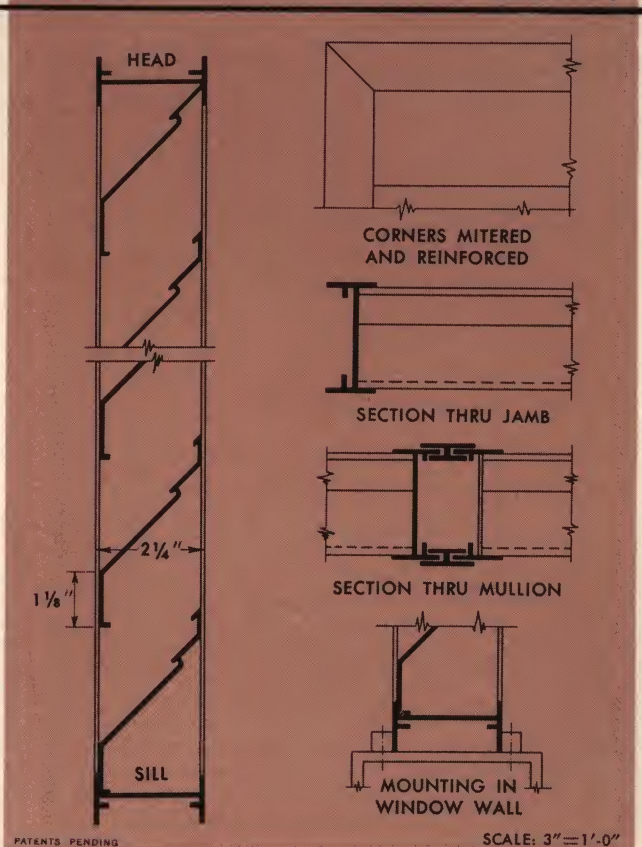
design The A 225 louver blades have 1 1/8 inch face which provides a bold horizontal line. The blade also incorporates an additional water bar to increase its stormproof characteristics. Frames are neatly mitered at corners and reinforced with corner brackets. Screens, insulating panels, blank-off sheets or direct connections to air conditioning units may be used.

material Extruded aluminum sections 6063-T5 alloy, minimum .064 gauge with reinforcing bosses.

efficiency The A 225 panel wall louver has a free area of 52% with standard spacing as detailed.

suggested specifications

Furnish and install in all openings where so indicated on drawings C-S extruded aluminum panel wall louvers model number A-225 as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Frames and blades to be 6065-T5 alloy, minimum .064 gauge with reinforcing bosses. (For screen and finish specifications refer to pages 18 and 19.)



monumental louvers

EH-106, EH-108 STANDARD BLADE
EH-406, EH-408 STORMPROOF BLADE

features

application Construction Specialties, offers two heavy gauge louvers, 6 and 8 inches deep, both designed to answer the high velocity, high efficiency ventilation demands in such installations as cooling towers, tunnel air intakes, and parking garage ventilating systems.

The depth of these louvers allows a large opening which may effectively be made a part of the building design. Their heavy gauge and the size of their sections make them especially desirable where a large module or heavy appearance is required. Exceptional strength, rigidity, and clean-cut line have been designed into these louvers to meet the highest requirements for permanence in buildings of monumental character. In specifying these louvers, an anodized and lacquered finish should be required.

The specialized experience of our engineering department is available whenever these louvers are under consideration.

architectural horizontal line Where the architect desires an architectural horizontal line extending the full sweep of the louver in a large module we suggest the use of the EH series, six or eight inch louvers together with the C-S structural interlocked blade brace anchored to the structural supports at back of louver. The interlocked blade brace effectively supports the blade brace and provides for expansion and perfect blade line-up.

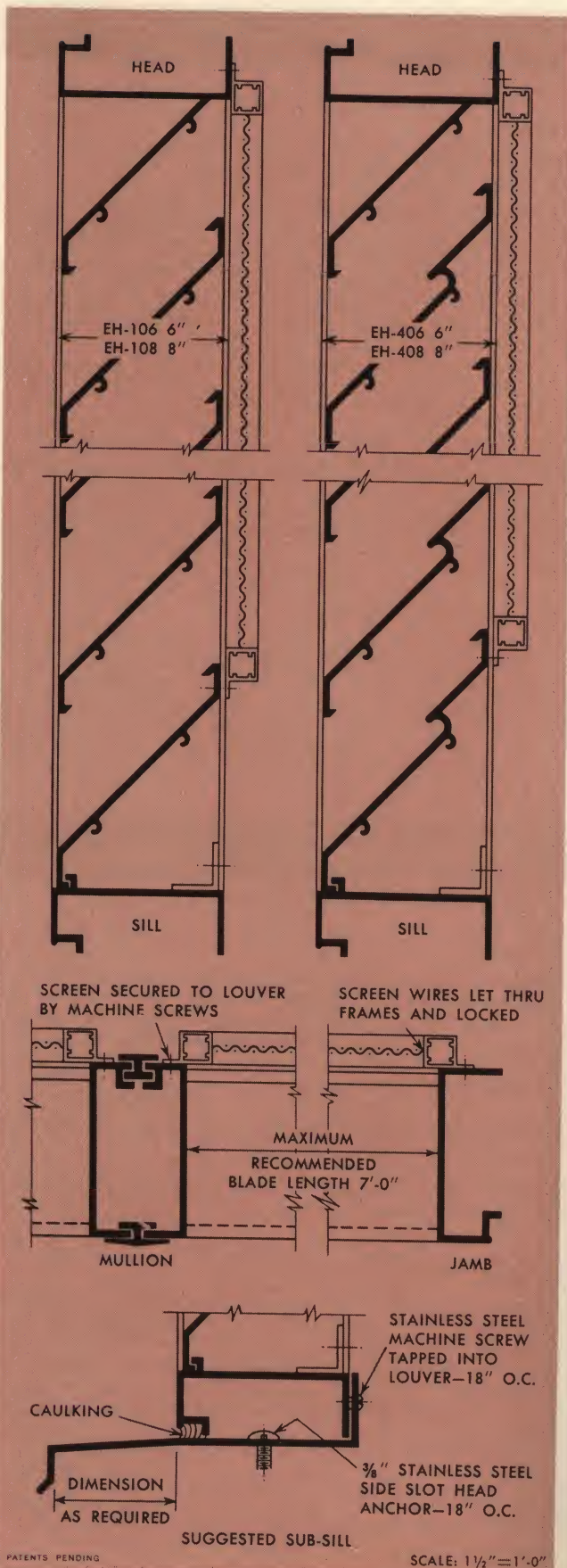
efficiency The standard blades have a free area of approximately 60%; the stormproof units have a free area of approximately 53% with standard spacing as detailed. The larger air opening provided by the six and eight inch louver depth produces a better air flow characteristics, materially adding to louver efficiency.

screening C-S monumental bird screens are available with free area from 70% to 82%. Screens are structurally independent and are of heavy gauge double crimp wire. For complete screen information see page 18.

suggested specifications

EH 106 • EH 406 Furnish and install in all openings where so indicated on the drawings C-S extruded aluminum louvers, monumental type EH 106 (or EH 406) as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). All louvers to be fabricated from extruded aluminum sections 6063-T5 alloy. Blades shall be a minimum .125 gauge with reinforcing beads. Frames and mullions shall be a minimum .140 gauge. All fastenings and anchorage inserts shall be stainless steel type 302. All louvers to have a hand rubbed satin finish and given a one hour .0008 thickness anodize protected by two coats of CS-64 clear, butyrate lacquer. Certification of the quality and thickness of the anodic treatment will be furnished to the architect. Field tests of all anodize shall be made at architect's request. All louvers to be supplied with heavy gauge sills, flashings, and anchorages as detailed. For complete information on screens see page 18.

EH 108 • EH 408 Furnish and install in all openings where so indicated on the drawings C-S extruded aluminum louvers, monumental type EH 108 (or EH 408) as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). All louvers to be fabricated from extruded aluminum sections 6063-T5 alloy. Blades shall be a minimum .156 gauge with reinforcing beads. Frames and mullions shall be a minimum .156 gauge. All fastenings and anchorage inserts shall be stainless steel type 302. All louvers to have a hand rubbed satin finish and given a one hour .0008 thickness anodize protected by two coats of CS-64 clear, butyrate lacquer. Certification of the quality and thickness of the anodic treatment will be furnished to the architect. Field tests of all anodize shall be made at architect's request. All louvers to be supplied with heavy gauge sills, flashings, and anchorages as detailed. For complete information on screens see page 18.



door louvers

features

economy C-S Door Louvers look expensive but are economical. They offer the advantage of a sturdy extruded aluminum louver with superior style and appearance over lighter gauge, raw-edge sheet steel assemblies. Our experienced engineering and production facilities, and the labor savings inherent in our use of extruded sections are the key to this important feature.

material C-S Door Louvers are fabricated from extruded aluminum sections, 6063-T5 alloy, minimum 16 B&S gauge. Reinforcing bosses or returns are provided on all blades and frame members. All fastenings are aluminum or stainless steel.

frame members The type L frame is designed to trim the exterior of the opening without the use of exposed fastenings. The type A frame is designed for use where the architect desires to anchor the louver by means of a moulding.

anchorage Each C-S Type L frame Door Louver is shipped with an extruded interior trim frame which matches the exterior trim member. Louvers are fabricated with an integral locking arrangement that serves to positively and permanently clamp the louver in the door opening. A minimum of effort is required to mount the louver and a neat, finished appearance is provided on both faces of the installation.

finish The standard C-S Door Louver finish is a six minute caustic etch and two coats of CS-64 clear butyrate lacquer. This finish gives the louver a pleasing neutral appearance which will last for years and will harmonize with any interior decoration, or match other items of aluminum trim.

Alternate finishes are baked enamel or prime coat for field painting.

types • sizes • model numbers

model number	louver depth inches	frame type	frame face X inches	blade face Y inches	blade space Z inches
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type D blade

DA 100	1.000	A	.500	.375	1.000
DL 100	1.000	L	1.125		
DA 138	1.375	A	.625	.500	1.375
DL 138	1.375	L	1.250		
DA 200	2.000	A	.875	.625	1.875
DL 200	2.000	L	1.500		

type N blade

NA 100	1.000	A	.500	.375	1.250
NL 100	1.000	L	1.125		
NA 138	1.375	A	.625	.500	1.750
NL 138	1.375	L	1.250		
NA 200	2.000	A	.875	.675	2.500
NL 200	2.000	L	1.500		

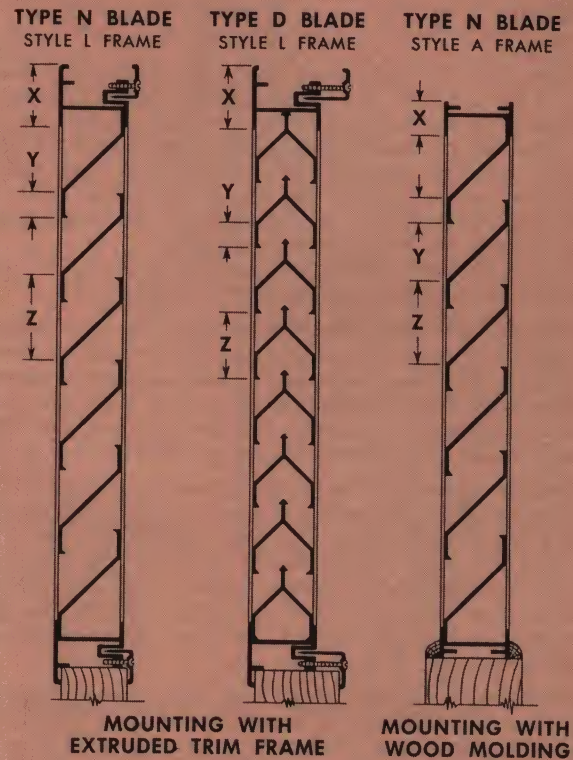
suggested specifications

Furnish extruded aluminum Door Louvers Model (see table above) as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). All blades, frames, and trim members to be 6063-T5 alloy minimum 16 B&S gauge. All fastenings to be stainless steel or aluminum. A separate adjustable trim member shall be supplied to securely and neatly clamp louver in opening. Interior trim frame to be secured by counter sunk phillips head screws. All frames and trim members to be mitered at corners and rigidly secured by corner brackets. Complete assembly to have a three minute caustic etch and two coats of C-S 64 clear butyrate lacquer.

For alternate finish specifications refer to page 19.

For economy stock sizes contact your nearest representative.

BLADE AND FRAME STYLES AVAILABLE

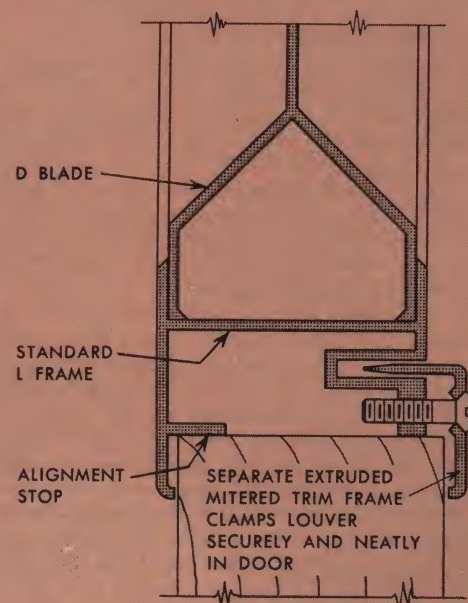


NOTE: ALL BLADE TYPES AND FRAME STYLES ARE INTERCHANGEABLE

SCALE: 3"=1'-0"

STANDARD TRIM AND ANCHORAGE

FOR 1 3/8" AND 1 3/4" DOORS



PATENTS PENDING

FULL SIZE

manual operating louvers

CO-222

features

design The C-S CO-222 operating louver is adaptable for single unit or multiple bays and provides dependability and interior neatness. Free area is approximately 59%. All operating parts are concealed and protected against wear, corrosion and abuse. Units may be effectively screened on the interior since there are no projecting operating arms at the rear of the louver. Head, sill jamb and mullion sections are structural members. Mullions are neatly designed for expansion and contraction. Full size operating samples are promptly available for your inspection by contacting your nearest C-S representative.

concealed operation The operating mechanism uses precision fabricated drive arms and compensating bars concealed in jambs or mullions. These are manufactured of $\frac{1}{8}$ " bar with stainless steel fastenings and nylon bearings at all pivot points. Blades are center balanced for ease of operation, and are equipped with high strength zamac alloy pinions and nylon bearings.

individual operation The model 410 standard operator is a quality unit with a case hardened gear in an aluminum housing with stainless steel driving pins. One operator provides easy operation of up to 80 square feet of louver area. This operator may be mounted on either jambs or mullions, either right or left-hand at whatever height desired. Operators are easily removable for installation or replacement. All operators carry an unconditional guarantee for three years.

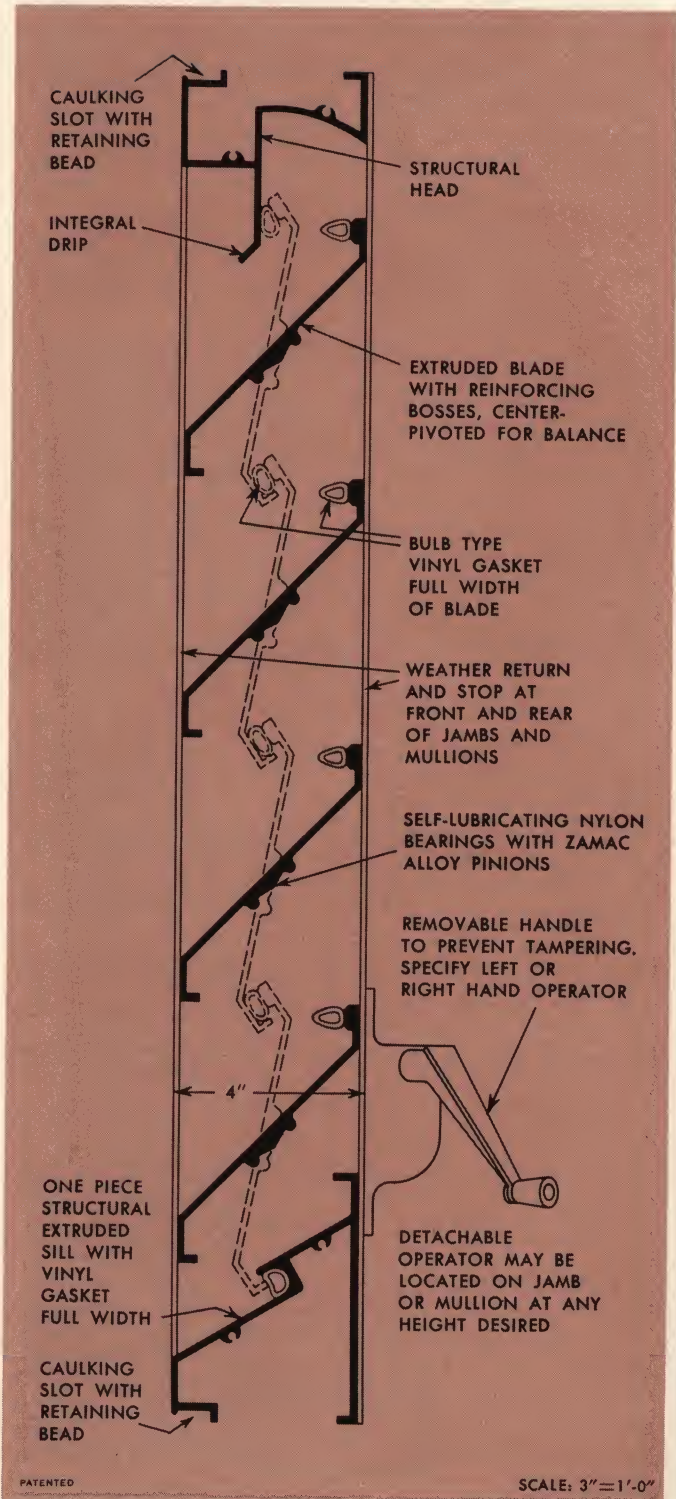
multiple bay operators Where large banks or bays of operating louvers are required, our multiple bay operator MB 1500 is economical, neat and effective. We recommend that the architect draw on the experience of our engineering department when louvers of this type are under consideration.

full width vinyl gasket Each blade and sill is equipped full width with permanent bulb-type vinyl gaskets for draft-free, noiseless closure. Jamb gaskets can be furnished where specified.

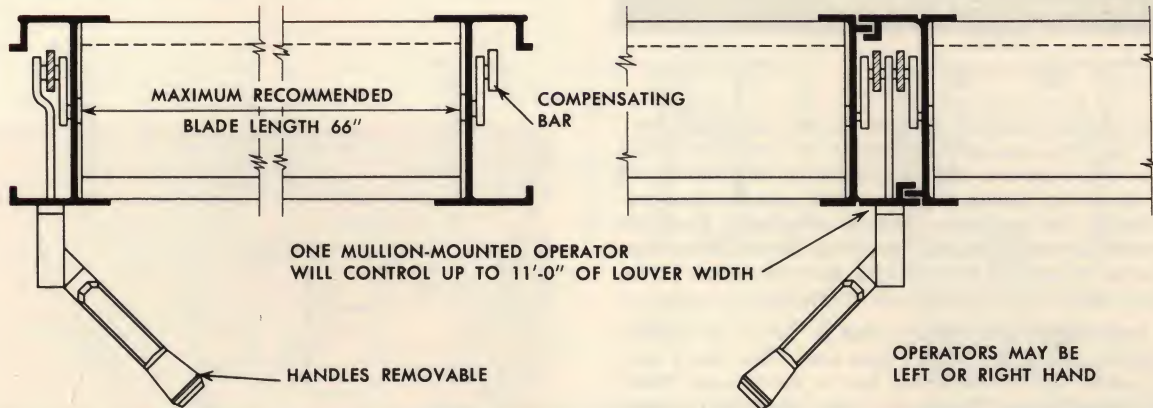
economy Our CO-222 operator competes in price with other extruded or sheet metal louvers with old style operators. Ease of installation, particularly where our simplified multiple bay operators are specified contributes additional economies.

suggested specifications

Furnish and install in all openings where so indicated on the drawings, C-S Extruded Aluminum Louvers, Manual Operating Louver CO-222, as manufactured by Construction Specialties, Inc., Cranford, New Jersey, (for West Coast use Escondido, California). Frame and blades are to be 6063-T5 alloy, .081 gauge. All blades to be center pivoted with two reinforcing bosses and have zamac alloy pinions operating in self-lubricating nylon bearings. Mullions to be sliding interlock type. Standard operator 410 shall be located as required by the architect. Operators shall be easily removable and shall be unconditionally guaranteed for a period of three years. All louvers to be equipped with concealed drive arms and compensating bars to effect positive closing and positioning of louver blades. All drive arms and compensating bars to be assembled with stainless steel rivets with nylon bearings at all points of movement. All connections between drive arms and operators shall be stainless steel. All louver blades and sills to be equipped with bulb-type vinyl gaskets. Louvers shall have #8 mesh .018 diameter wire bird screens secured in re-wireable rolled aluminum frames. All screens shall be secured to the interior of louvers. All louvers to be free of scratches and blemishes, to be given a six minute caustic etch after fabrication, and one coat of CS-64 butyrate lacquer. An operating sample shall be submitted to architect for approval. All louvers to be supplied with screens and anchorages as detailed. For screen specifications, refer to page 18.



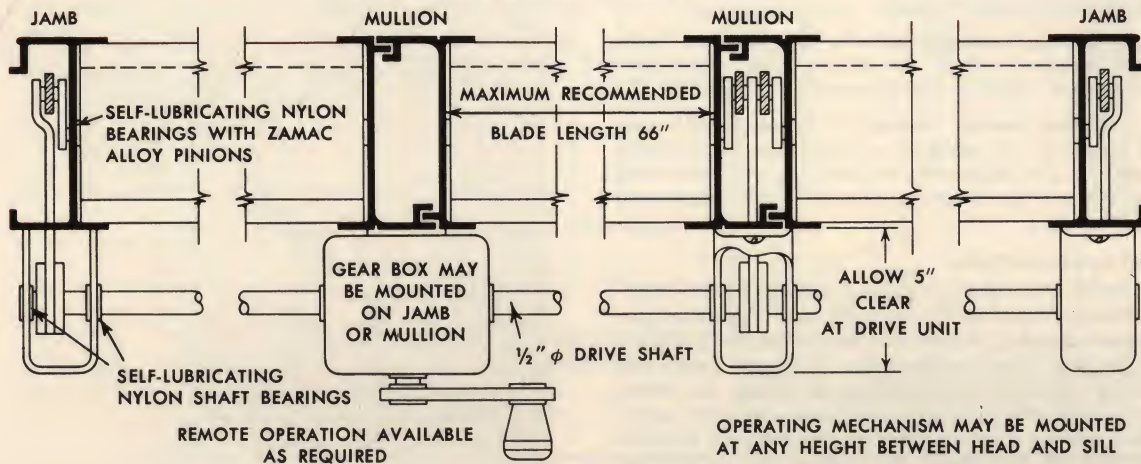
individual operating louvers



SCALE: 3" = 1'-0"

multiple bay operation

UP TO TEN LOUVERED UNITS MAY BE CONTROLLED FROM A SINGLE MANUAL OPERATOR



SCALE: 3" = 1'-0"

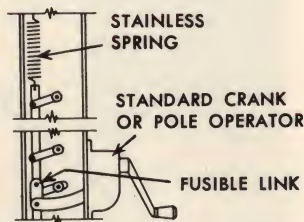
alternate operators

flush type



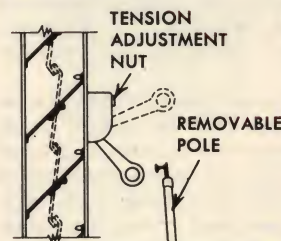
The model FT-431 operator is designed for use where space limitations or appearance considerations are a factor. The 1/2 inch diameter female section of the operator is adjustable from flush to a one inch projection from the face of louver jamb. The rugged worm gear operating mechanism is concealed in the jamb. The operating handle is removable. Specify CO-222 operating louver with FT-431 operator.

fusible link operator



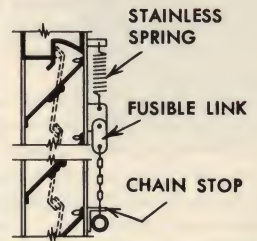
The SF-807 operator utilizes a fusible link mechanism for fire retarding applications. Operation is simple and positive. Louver blades may be positioned normally closed or normally open depending on the application of the louver. Fusible links bear Underwriters' Label. Specify CO-222 operating louver with SF-807 operator.

pole operator



The PT-730 pole operating mechanism utilizes a heat treated cam with an adjustable tension nut to secure louver blades in any position desired. The unit is maintenance free, inconspicuous and simple to operate. Specify CO-222 operating louver with pole operator PT-730.

chain operator



The FU-207 is designed for use where economical control is desired for louvers that are located out of convenient reach. One mullion mounted operator will operate up to 10 feet of louver width. Fusible links may be incorporated at no extra cost. Specify CO-222 operating louver with FU-207 operator.

electrical operating louvers

EX-110

features

design The EX 110 electrically operated louvers feature standardized motor operators specifically designed for operation of C-S extruded aluminum louvers. Each installation is shop tested and aligned at the factory before shipment. Motor operators are protected by heavy duty enclosures and are completely pre-wired. All units are easily removable for servicing. EX-110 motor units are supplied for an input of 110/120 volts, 60 cycles, single phase. The motor will operate up to seventy-five square feet of louver area.

multiple bay operation Large banks or groups of louvers require a higher horsepower, high torque motor. One heavy duty motor will operate up to 450 square feet of louver area. These motors are available for 110/120, 60 cycles input. For special applications or unusual current conditions, contact our engineering department.

controls The proper C-S controls should always be specified by number for use with the EX 110 motor operator. C-S Standard controls are shown on opposite page.

Underwriters' Laboratories approved. All C-S standard motor operators and standard controls are Underwriters' Laboratories tested and approved and bear the Underwriters' Label.

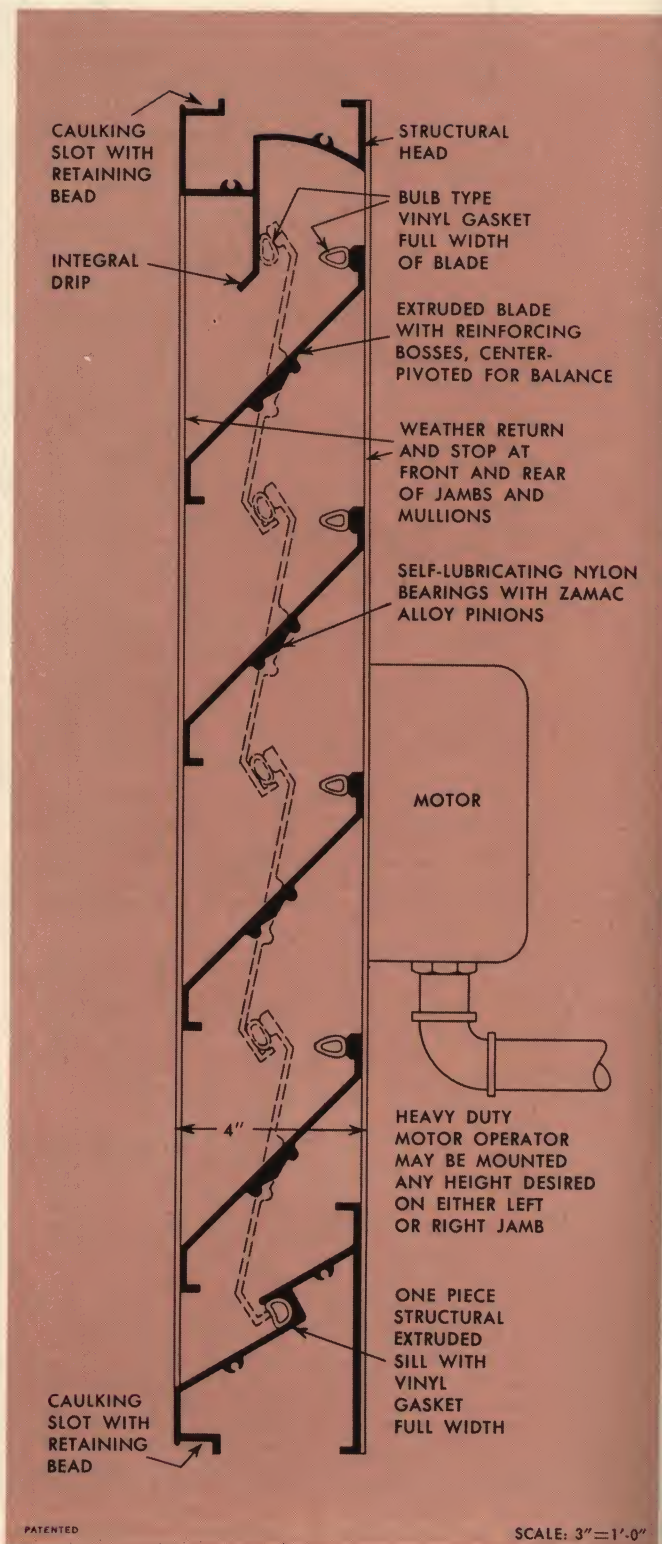
complete electrical louver systems A C-S electrically operated louver system can be designed to operate one or an infinite number of louvers. Our engineering facilities are available to the architect or engineer for complete electrical and architectural details.

suggested specifications

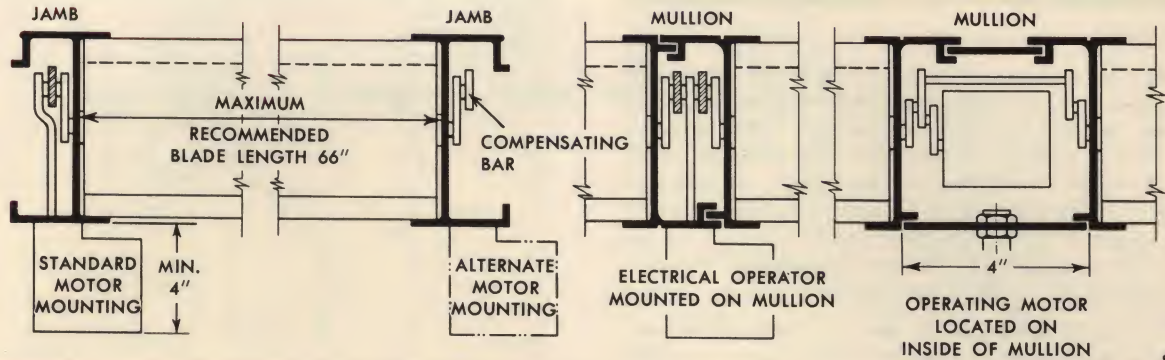
Furnish and install in all openings where so indicated on the drawings, C-S extruded aluminum louvers, electrical operating type EX 110 as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Frame and blades are to be 6063-T5 alloy, minimum .081 gauge. All blades are to be center pivoted with two reinforcing bosses and have zamac alloy pinions operating in self-lubricating nylon bearings. Mullions are to be sliding interlock type. Electrical operators shall be supplied completely wired as a unit ready for installation on the louver. Operator shall be electrically driven sealed gear unit equipped with limit switches for full "open," full "close" positioning. Input voltage shall be 110/120, 60 cycle, single phase. Maximum power requirement shall be no greater than 100 VA. Motor shall have protection against sustained overloading. All motor units and controls shall bear Underwriters' Label. Motors shall be completely enclosed in heavy gauge housing and easily accessible for inspection.

Control boxes shall be C-S remote control station MI-10 pre-wired at factory. Control station shall have operating buttons clearly marked "open" and "closed" complete with red indicating lights. Care should be taken that the proper C-S control equipment is specified. (See opposite page). Face plate to have black baked enamel wrinkle finish. Conduit and field wiring by others. All motors and controls shall be unconditionally guaranteed for one year.

All louvers to be equipped with concealed drive arms and compensating bars to effect positive closing and positioning of louver blades. All drive arms and compensating bars shall be assembled with stainless steel rivets with nylon bearings at all points of movement. All connections between drive arms and operators shall be stainless steel. All louver blades and sills to be equipped with bulb-type vinyl gaskets. All louvers to be free of scratches and blemishes, to be given a six minute caustic etch after fabrication and given one coat of C-S 64 butyrate lacquer. An operating sample shall be submitted to architect for approval. For alternate finish specifications, refer to page 19. For screen specifications refer to page 18.

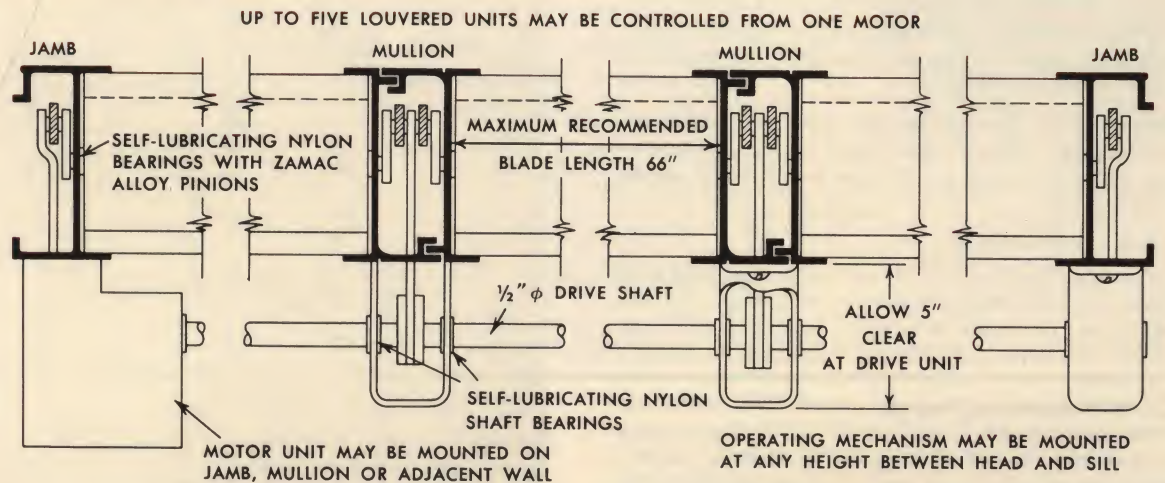


individual operating louvers



SCALE: 3"=1'-0"

multiple bay operation



SCALE: 3"=1'-0"

controls

VI-22



Designed for use where position of louver blades is to be controlled from operating station by visual reference. Unit is supplied with a single push button. Limit switches are not incorporated in EX-110 motor when the VI-22 remote operator is used. Unit is supplied completely wired, ready for field installation. Face plate is furnished with baked black enamel wrinkle finish. Control box may be mounted flush or projected.

MI-10



The MI-10 remote control station may be mounted in any desired location, either at the louver or remote location inside of building. Operating buttons with red indicating lights show the position of the louver as "open" or "closed." Limit switches correctly position louver blades. One MI 110 control can be utilized to control any number of EX 110 motors. Control box may be mounted, projected or flush with wall. Face plate with clearly legible operating markings are furnished in a baked enamel wrinkle finish.

TC-22



The TC-22 remote control station correctly positions the louver blades with relation to pre-determined thermal limits. The unit is automatic and is shipped complete with thermostat. One unit may be used to control a number of louvers. Each unit is pre-tested at factory. The TC-22 control is ideal for controlling temperatures in pump house, transformer rooms, mechanical rooms or where either excessive heat or cold poses a problem.

FC-18



The FC-18 control is a completely automatic cycling unit for use in conjunction with intake or exhaust fans. Starting and stopping of fan automatically positions louver blades. A single control box operates up to four separate louvers. The FC-18 does not draw necessary power to operate louvers from fan. No field wiring, adjustment or alignment is necessary. Units are available for standard commercial voltages. For special designs or applications, please consult our engineering department.

special operating louvers

DL-606 dual combination

The DL-606 dual combination louver consists of any combination of fixed louver, either standard or stormproof, with any C-S adjustable louver assembled at rear of fixed louver. Any C-S manual or electric operating control may be used on the operating section of this combination louver. The most economical combination is the AL-400 or AL-800 Architectural Horizontal Line Louver together with the standard CO-222 Operating Louver. The use of the horizontal line louver offers the architect the additional feature of an uninterrupted line in his exterior design.

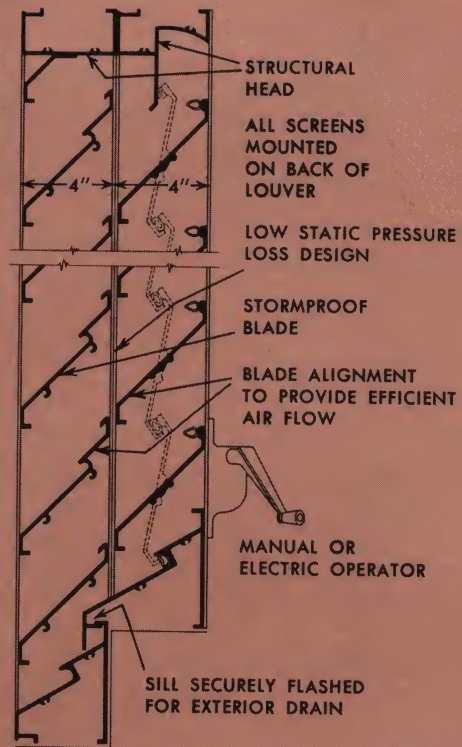
design The DL-606 is designed to give maximum weatherproofness yet provide complete freedom in air handling. The exterior louver allows an architecturally consistent louvered appearance. The effective flashing between the louvers is an important feature.

efficiency The DL-606 has a superior air flow for a louver of this type. The standard blade in combination with the operating louver will provide a free area of 57%, while the use of the stormproof blade gives an efficiency of 48%.

application The C-S dual combination louver is designed for use in power plants, mechanical equipment rooms, auditoriums or installations where continuous air exchange must be made despite weather conditions.

suggested specifications

Specify by number, refer to detailed specifications on page 4 for fixed louvers and pages 10 and 12 for operating louvers. For complete specifications or screens and finishes see pages 18 and 19.



PATENTED

SCALE: 1 1/2" = 1'-0"

GL-900 90° operating louver

The GL-900 louver offers a full 90° opening where high air velocities and high air volume requirements demand maximum free area with low static pressure drop. Stormproofness is compromised when louver is in full open position. The GL-900 may be operated by any of the C-S manual controls listed on page 10 or any C-S electrical shown on page 12. Operation is identical to either the CO-222 or EX-110 louvers.

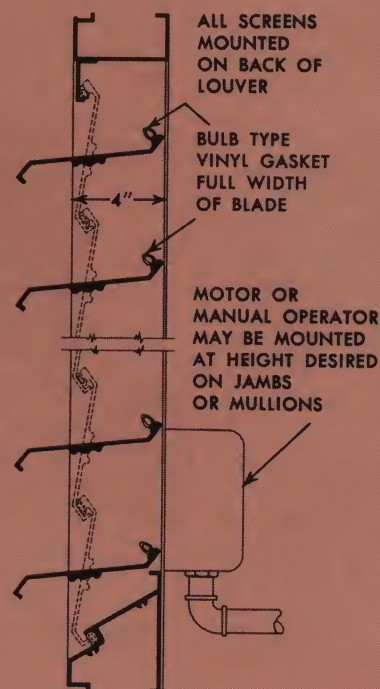
The GL-900 incorporates all the outstanding C-S extruded aluminum operating louver features including bulb type vinyl gaskets, zamac alloy pinions and nylon bearings.

The louver opening for the GL-900 should be not less than 18 inches in height.

A practical application is the combination of the GL-900 louver with the EX-110 motor and the number FC-18 fan control to handle motor driven exhaust air requirements. The exhaust air provides a weather barrier against rain or wind-driven snow. At all other times the louver is closed.

suggested specifications

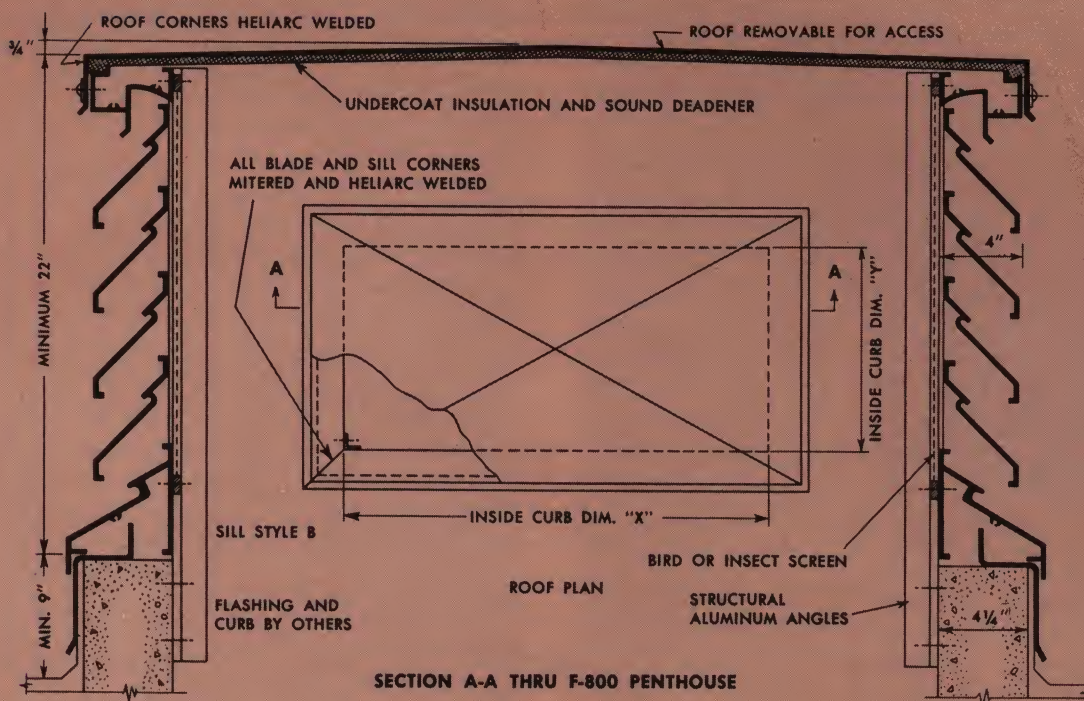
Specify the GL-900 90° operating louver by number and incorporate detailed specifications for the CO-222 manual operating louver on page 10 or the EX-110 operating louver on page 12 depending on operation desired.



PATENTED

SCALE: 1 1/2" = 1'-0"

louvered penthouses



features

The C-S Extruded Aluminum Penthouse answers the architectural requirement for an efficient, economical, good looking pre-fabricated air intake or air exhaust unit for handling ventilation problems through the roof.

pre-fabrication The C-S Penthouse eliminates need to design the many elements in penthouse construction, i.e., masonry, steel, roofing, sheet metal, and louvers. The C-S Penthouse is an engineered, job-tested product which combines in a single unit all these elements. It is quickly set on existing curbs, eliminating on-the-job labor and the co-ordination of a number of trades.

design The C-S Penthouse has a neat rugged, weatherproof design. Louver blades extend continuously around all four sides, corners are mitered and welded, providing an attractive horizontal line. Blades and sill are made of extruded aluminum sections 6063-T5 alloy, minimum .081 thick. All fastenings are stainless steel. All roofs are designed for a minimum 30 lb. snow load with proper safety factor. Roofs are removable for access.

economy Our penthouse is notably low in cost. The use of continuous louvers provides a more efficient penthouse; consequently, our penthouse can be designed smaller than conventional masonry types. All-aluminum construction minimizes maintenance and provides a light in weight unit that may save on supporting structure. Pre-fabrication eliminates on-the-job construction costs. Initial cost is low due to simplified design, fabrication from standard extrusions, and modern C-S shop procedures.

smoke vents An automatic, positive pop-up roof actuated by a fusible link may be incorporated on any C-S extruded aluminum penthouse so that it becomes an emergency smoke vent. Standard details and specifications are available.

operating penthouses Where air control is desired, we can supply operating louvers in place of the standard fixed blades. Alternate methods of air control with our penthouses may be secured by the use of the dual combination louver as shown on opposite page, or by automatic dampers secured at the rear of fixed blades.

large size structural penthouses C-S has designed and supplied louvered roof enclosures in very large sizes. For these unusually large penthouses, we use the principle detailed for our Architectural Line Louvers shown on page 4. Structural supporting elements and roof trusses must be engineered to handle maximum wind and snow loads. Access doors may be incorporated if required. Large penthouses are completely assembled at the factory, inspected, then dis-assembled for shipment to the job.

engineering facilities The extensive experience of our engineering department in the design and installation of extruded aluminum penthouses is promptly available to the architect on inquiry.

suggested specifications

Furnish and install where so indicated on drawings, C-S Penthouse F-800, as manufactured by Construction Specialties, Inc., Cranford, New Jersey, (for West Coast use Escondido, California). Sill, blades and heads to be fabricated of .081 gauge extruded aluminum sections 6063 T5 alloy. All sills, blades and heads to be continuously heliarc welded at the corners and supported by structural aluminum angles as detailed. All aluminum to have standard mill finish. All fastenings stainless steel. Penthouse shall have one piece weatherproof roof of .081 gauge sheet aluminum reinforced with 2" x 2" x 1/4" angles, 48" o.c. All roof corners to be heliarc welded. Entire underside of roof to be insulated with minimum thickness of 1/4" asbestos membrane coating.

Screens . . . for suggested specifications see page 18.

cooling tower screens

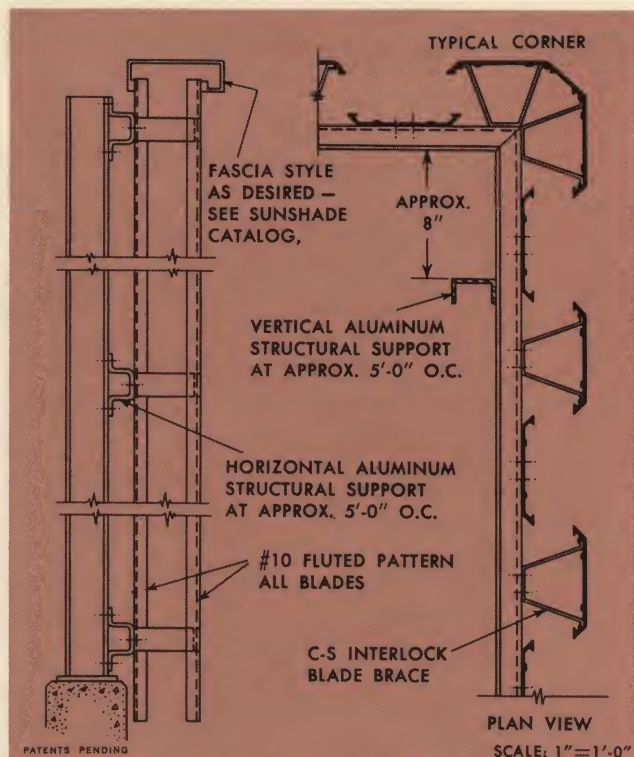
JR-555 vertical line

The JR-555 is designed to give the architect a high air efficiency cooling tower screen with a vertical line to harmonize with other elements in his design. Heavy gauge blade braces are locked to blades 5'0" on centers to secure them rigidly in position. Blade spacing may be varied to meet the problems of free area, vision screen, and match to adjacent siding.

Samples of the blade, blade braces and details of typical installations are available on inquiry to your nearest C-S representative.

suggested specifications

Furnish and install C-S cooling tower screen model JR-555 as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Blades to be fabricated from extruded aluminum sections 6063-T5 alloy, minimum .081 gauge. All blades to be secured to structural supports by heavy gauge extruded aluminum interlock blade braces 5 feet on centers. Blades shall not have horizontal joints in sections less than 25 feet high. Expansion and contraction joints shall be maintained in perfect alignment by use of internal line-ups. Structural supports shall be approximately 5 feet on centers. All fastenings shall be stainless steel type 302. Trim Cap shall be style H8. All blades to have a #10 pattern face on all exposed face surfaces. Trim cap and blades to be free of scratches and blemishes and to be given a six minute caustic etch and one hour .0008 thickness anodize protected by two coats of CS-64 butyrate lacquer. Certification of the quality and thickness of the anodic treatment shall be furnished to the architect. Field tests of all anodize to be made at architect's request. For alternate finish specifications, see page 19.



HH-888 honeycomb-hex

The Honeycomb-Hex cooling tower screen gives the Architect an opportunity to incorporate an unusual patterned texture to his cooling tower design. This screen has a maximum free area for air circulation and yet serves as a vision screen from street levels. The honeycomb-hex is formed from pattern surface aluminum to effectively diffuse sunlight. Standard design is a 2 inch hex, 4 inches deep. Independent panels are fabricated up to 12 feet by 20 feet.

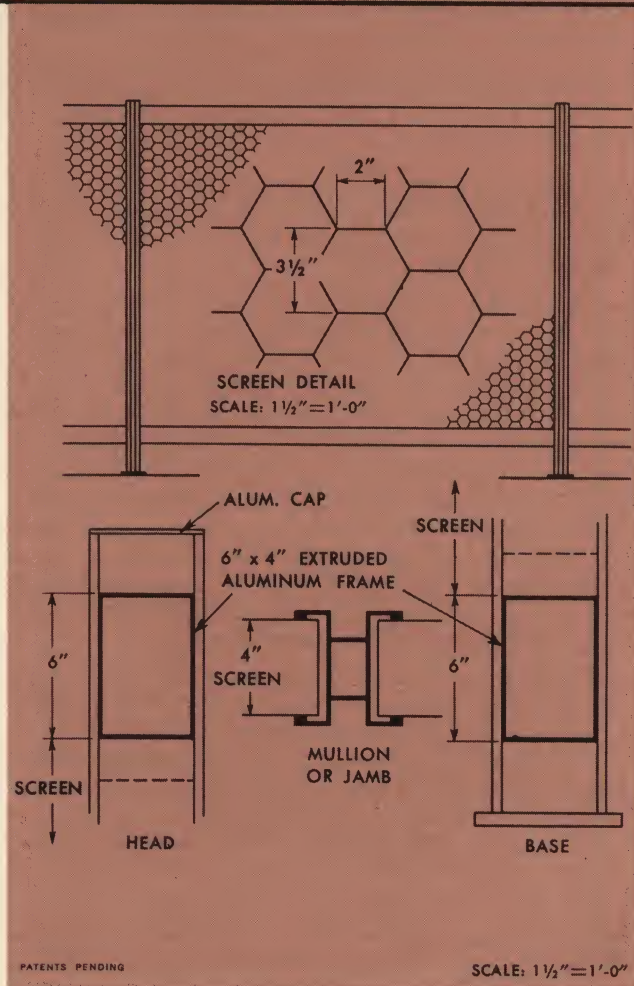
Larger modules in varying depths, in a honeycomb or other pattern, may be supplied to the architect's design where installations of reasonable size are involved. A wide range of clear or color finishes are economically available.

A system of engineered structural members secure the screen in position. A variety of extruded aluminum mullions, and heavy box frame members are available to meet the architects' individual design considerations.

We suggest the architect contact the home office for samples, details, engineering and price data whenever this screen is under consideration.

suggested specifications

The variety of hex sizes, the multitude of finishes, and the engineering considerations, make it essential that the architect secure detailed specifications from the home office to cover his individual installation.

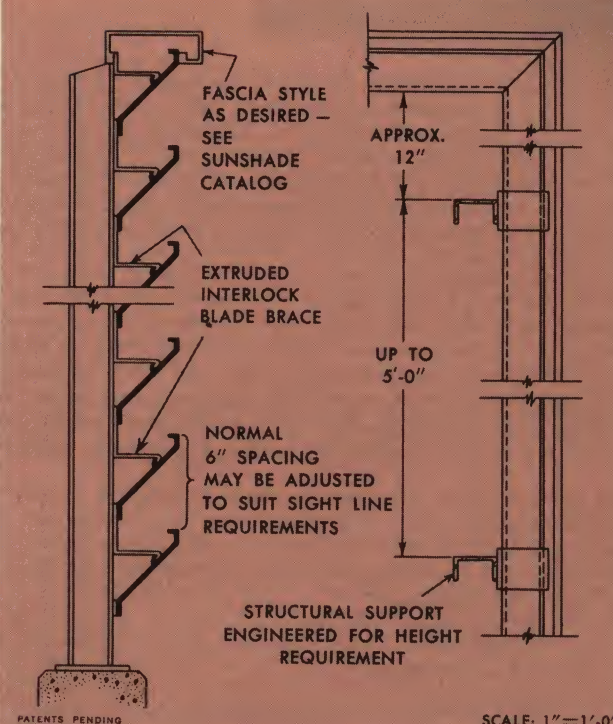


JK-444 horizontal line

The JK-444 cooling tower screen features a continuous horizontal line which the architect may incorporate into his building design. An extruded blade brace is used to support the blades from structural members concealed behind the blade screen. The extruded blades effectively block all vision through the screen, and yet provide an efficient air flow. This design also serves to contain cooling tower water so that the exposed surfaces remain clean and unstained. Ease of shop fabrication and field erection contribute to the overall economy of this cooling tower screen.

suggested specifications

Furnish and install C-S cooling tower screen model JK-444, as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). Blades to be fabricated from extruded aluminum sections, 6063-T5 alloy, minimum .081 gauge. All blades to be supported and lined up by means of heavy gauge extruded aluminum blade braces positively interlocked to each blade and secured to structural angles by stainless steel fastenings type 302. Structural supports to be designed to carry a wind pressure of not less than twenty pounds per square foot. At corners, blades shall be mitered and continuously heliarc welded. Provision for expansion and contraction shall be made approximately 20 feet on centers. Trim cap shall be style H8, minimum .125 gauge. Trim cap, blades and structural supports to be free of scratches and blemishes and to be given a six minute caustic etch protected by two coats of CS-64 butyrate lacquer. For alternate finish specifications, refer to page 19.

**AF-666 structural airfoil**

The seamless airfoil shapes which are used in the AF-666 are clean in design and structurally rugged. The architect may select any of a number of sizes to give the desired module. The airfoils may be specified in a smooth surface or a #10 fluted pattern. Blades may be designed to run in a continuous line from structural supports or to be framed between mullions. Typical details and engineering are available.

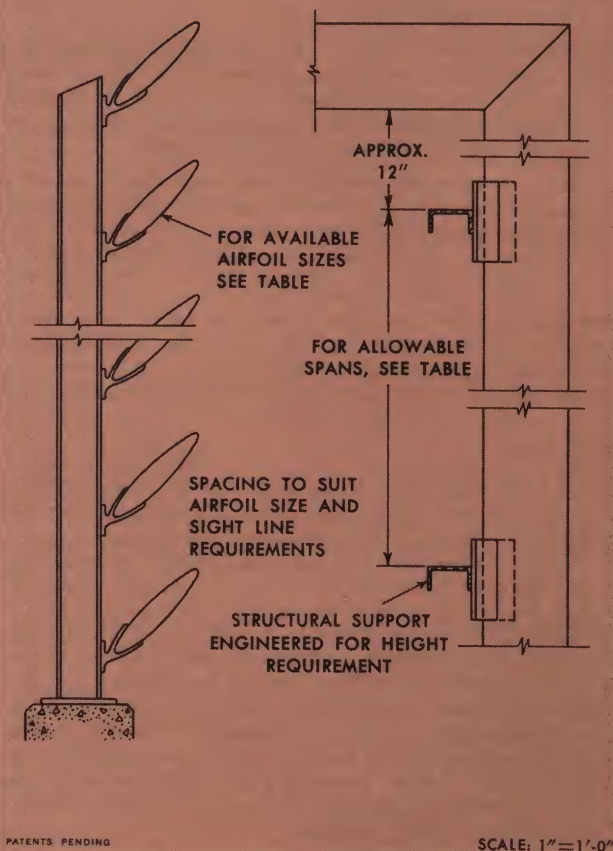
suggested specifications

Furnish and install C-S Cooling Tower Screen model AF-666 with 12 inch by 2 inch airfoil blades (or other size see table), as manufactured by Construction Specialties, Inc., Cranford, New Jersey (for West Coast use Escondido, California). All blades shall be one piece airfoil shapes, 6063-T5 alloy, minimum .051 gauge (see table) extruded aluminum sections with #10 pattern face (or plain face). Anchorages shall be neat and positive and designed with adequate provision for expansion and contraction. All blades shall have internal line-ups at joints. All anchorages and fastening devices shall be of stainless steel or aluminum. Airfoils and anchorages shall be certified structurally to meet maximum wind loadings. All blades and structural supports to be free of scratches and blemishes and be given a six minute caustic etch with two coats of clear C-S 64 butyrate lacquer. For other finish specifications, refer to page 19.

sizes available**airfoil**

size, inches	allowable span, feet*	gauge	face finish
7½ x 1½	12	.047	plain
9 x 1¾	15		or
12 x 2	17	.051	#10 pattern
15½ x 2	20		

* wind pressure 20 p.s.f.

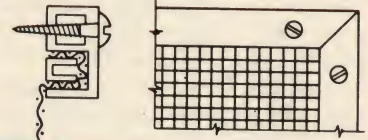


screens

Construction Specialties features a complete line of protective or decorative screens. Our standard screens are listed below, together with details on free areas, gauges, and framing. Screens other than our standards can be supplied in any procurable material and mesh to the architect's specifications. Where unusually strong, sturdy and large size bird screens are required, we suggest our C-S Monumental Bird Screen, detailed below. This screen features a heavy gauge extruded aluminum channel construction with heavy gauge aluminum mesh let through holes punched in frame and locked. These screens may be furnished as individual units, in sizes up to 6' x 14'.

insect screens C-S Insect Screen is aluminum, 18 x 14 mesh, .0123 diameter, 5056 clad. This screen has a maximum free area of 60%. Frames are of rolled aluminum, with mitered corners, secured with corner clips, providing an exceptionally strong and neat screen frame. All insect screens and frames may be removed from the louver proper, and all screening may be removed easily from frames. Insect screens may be secured to the interior or exterior by use of clips or sheet metal screws.

INSECT SCREEN



bird screens C-S Bird Screens may also be furnished in any procurable material and mesh to the architect's specifications. The following screens are immediately available from stock and are recommended for their appearance and strength in combination with efficient free area:

Light Gauge (aluminum)

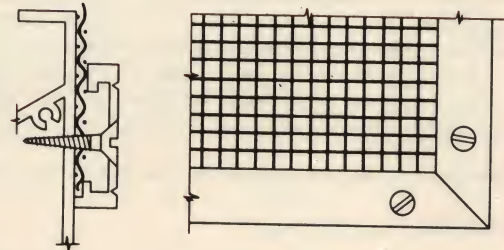
#8 (1/8") mesh	.018 diameter wire	70% free area
#4 (1/4") mesh	.020 diameter wire	84% free area

Heavy Gauge (aluminum)

#4 (1/4") mesh	.047 diameter wire	71% free area
#2 (1/2") mesh	.063 diameter wire	80% free area
#1 1/2 (3/4") mesh	.063 diameter wire	84% free area
#1 (1") mesh	.081 diameter wire	88% free area

All screens fit into extruded aluminum frames mitered at corners and secured with corner locks. Screens are fastened to the louver frame with sheet metal screws. All bird screens may be readily removed from frames and easily replaced.

BIRD SCREEN



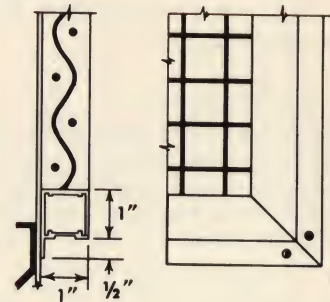
monumental bird screens C-S Monumental Bird Screens are of superior quality and heavy gauge, independently framed in heavy gauge extrusions. They recommend themselves for character, sturdiness of frame and screening, and particular suitability for screening large louver areas. They may be used to advantage apart from louvers.

Screening is of heavy gauge, double crimp wire, each wire let through the extruded frame and permanently secured. These meshes are suggested—others are available on inquiry:

1/2" mesh	.080	Single Crimp Wire	70.6% Free Area
3/4" mesh	.092	Double Crimp Wire	76.9% Free Area
1" mesh	.092	Double Crimp Wire	82.4% Free Area

Frame members are 1" extruded box sections, mitered at corners, secured by internal corner brackets and welded. Frame is closed so no wire ends are visible. Braces may be added. Screen and frames are held by stainless bolts tapped into sub-frame. Samples and cost data on request.

MONUMENTAL BIRD SCREEN



anchorage

Corrugated Buck Anchor 2 1/4" wide 4" long. These 12-gauge aluminum anchors are adjustable to meet the brick coursing. They are spaced 18" on centers or a minimum of three per jamb.

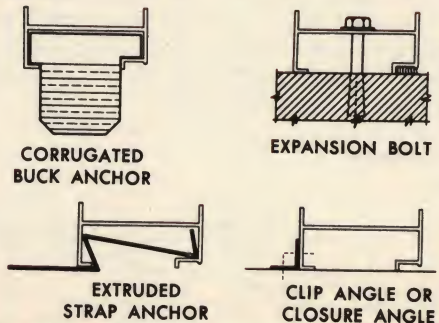
Extruded Strap Anchor This economical anchor fits jambs, head, and sill and leaves a smooth interior surface to the louver frame. It is most valuable where duct connections are to be made to the louver.

Clip Angle These anchors are 1" x 2" x 1/8" wide and are expansion bolted to the adjacent structure and then fastened to the louver proper. The anchors should be spaced 24" on centers.

Continuous Closure Angles These angles may be used for jambs, heads, or sills. They are 2" x 1" x 1/8", are expansion bolted to the adjacent structure and then fastened to the louver frame.

Expansion Bolt Louver jambs may be directly expansion bolted to adjacent masonry. Cadmium plated bolts and aluminum washers with neoprene gaskets should be used.

ANCHORAGES



finishes

The architect should clearly include a finish specification wherever C-S aluminum products are indicated. As a minimum specification, we recommend: "All aluminum to be free of scratches and blemishes, and to be given a six minute caustic etch with one coat of CS-64 butyrate lacquer."

This finish, furnished by us at no extra cost, protects the neatness of our products during installation and for years thereafter. Con-

mill finish

The natural finish of aluminum as received from the extrusion press has an attractive, pleasing grain. Subsequent weathering grays the metal uniformly. The as-fabricated extrusion provides a low-cost finish because it requires no special treatment. However,

caustic etch and butyrate lacquer

Caustic etch and butyrate lacquer provides a satin finish which combines economy and a long life clear protective coating. The etch is produced by a low cost chemical treatment, well suited to C-S extruded aluminum products. Various degrees of etch are available. The etch not only provides a clear even texture to the aluminum, but is a pre-requisite to a proper lacquer bond. CS-64 Butyrate Lacquer is the finest exterior protective lacquer now available. Research laboratory tests reveal it to be con-

struction Specialties maintains complete in-plant production finishing facilities for etching, anodizing, lacquering, porcelain enameling, baked enamel painting, and mechanical polishing. Our direct control of our finishing facilities, at point of manufacture, assures high quality with production-run economy. Samples and cost comparisons on our finishes are available to the architect on request.

unprotected mill finish will show fingerprints and is susceptible to damage by mortar. Hence, we recommend our minimum specification of caustic etch and butyrate lacquer.

siderably superior to a methacrylate lacquer. It has shown itself to withstand the most rugged on-the-job testing, with no visible deterioration for periods of over four years. Detailed specifications, weatherometer test data and test comparisons with methacrylate lacquer are available for review.

Mechanical satin finish can be used prior to the etch and lacquer treatment where a special texture is desired.

anodize finishes

Construction Specialties has complete modern facilities to anodize individual structural pieces up to 25 feet in length. This electrolytic treatment provides a smooth hard oxide coating that protects surface appearance, retaining the natural color and surface texture of aluminum. Anodized surfaces also offer increased resistance to wear, abrasion and weather and are easy to maintain. We recommend a one-hour anodize to give a .0008" coating, having a per square inch weight of 35 mg. All of our anodized work receives two coats of CS-64 butyrate lacquer. It is recommended that anodize treatments be applied to textured pre-treatments as previously discussed. It may be specified numerically as follows:

Caustic Etch and Alumilite.....#215 R1
Mechanical Satin Finish and Alumilite.....#215 C1

C-S maintains a quality control and certifies each job in writing as to surface film, thickness, density, range and color.

Since anodize coatings are difficult for the architect to check in the field, a written certification on the finish should be required whenever anodize is specified.

suggested specifications

All aluminum shall have a one-hour anodize 215 R1, with two coats of CS-64 butyrate lacquer. Anodic film thickness to be .0008 inches. A certification as to film thickness, density range, and color analysis shall be supplied. Field tests of all anodize to be made at architect's request.

epoxy base color coatings

Epoxy base coatings are a new finish process which offers the architect permanent colors on aluminum with remarkable economy. Epoxy base resin coatings were developed in answer to an architectural demand for an inexpensive color coating with the economy of baked enamel and the long life of porcelain enamel.

The color range is very broad and colors can be supplied opaque, transparent, matte, or high gloss. We recommend that you contact our home office for test data and color samples.

porcelain enamel colors

An almost unlimited selection of colors are available in matte or gloss finishes in vitrious porcelain enamel on aluminum. They are economically practical, as well as highly decorative. Porcelain enamel colors on aluminum resist fading and withstand abuse without chipping or spalling. Wherever porcelain enamel is speci-

suggested specifications

All louvers (or other C-S products) shall have a factory applied prime and finish coat in colors selected by the architect. All aluminum shall receive a chemical pre-treatment before priming. Primer shall be of the epoxy resin type, baked on for fifteen minutes at 300° Fahrenheit. After priming an epoxy resin finish coat shall be applied and baked on for 25 minutes at 350° Fahrenheit.

fied on C-S products, a detailed specification covering basic alloys, pre-treatment, enamelling, gloss, color and spall testing should be incorporated into the specifications. Full length specifications covering porcelain enamel on aluminum and porcelain samples are available on the architect's inquiry.

SALES AND ENGINEERING REPRESENTATIVES

For detailed information and samples of our products, telephone your nearest representative or contact our home office.

ALABAMA

Birmingham
Alpine 1-1201
Mobile
Hemlock 3-0052

ALASKA

Seattle, Washington
Main 4-1570

ARIZONA

Phoenix
AMherst 6-3697

CALIFORNIA

Escondido
Sherwood 5-8000

Fresno

AMherst 8-8444

Los Angeles
EXbrook 5-1225

Sacramento
Gilbert 3-6050

San Diego
Sherwood 5-8000

San Francisco
Atwater 2-0138

COLORADO

Denver
Pyramid 4-4649

CONNECTICUT

Hamden
Main 4-9954

DELAWARE

Wilmington
Olympia 6-8518

DIST. OF COLUMBIA

Washington, D. C.
Juniper 5-6161

FLORIDA

Jacksonville
Elgin 6-4821
Tallahassee
Tallahassee 4-2634

Tampa
WEBster 9-3431

GEORGIA

Atlanta
TRinity 4-3804

Augusta
PARK 2-4477

IDAHO

Boise
3-3758
Spokane
FAirfax 5-0242

ILLINOIS

Chicago
Central 6-2101
Peoria
3-0244

INDIANA

Indianapolis
MEIrose 2-9388

IOWA

Des Moines
Crestwood 7-7168

KENTUCKY

Louisville
EMerson 3-4839

LOUISIANA

New Orleans
JACKson 5-9581

Shreveport
6-2723

MAINE

Boston
COMmonwealth 6-5334

MARYLAND

Baltimore
BELmont 5-7781

MASSACHUSETTS

Boston
COMmonwealth 6-5334

Springfield
REpublic 7-8531

MICHIGAN

Detroit
VERmont 7-8836

MINNESOTA

Minneapolis
FEDeral 8-1528

MISSISSIPPI

Jackson
4-2346

MISSOURI

Kansas City
BALtimore 1-7544

St. Louis
STERling 1-0884

MONTANA

Billings
9-3639

Great Falls
GLEndale 2-2011

NEBRASKA

Omaha
ATLantic 1776

NEW MEXICO

Albuquerque
AXtel 9-2411

NEW YORK

Albany
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